513. Geometry. Conic sections.
514. Trigonometry.
515. Descriptive geometry.
516. Analytic geometry. Quaternions.
517. Calculus.
518.
519. Probabilities.

Thus, carrying out the decimals, many of these subjects have been very minutely classified.

The following shows how this is done:

900. History.
970. History of North America.
973. History of the United States.
973.1. History of the United States. Period of discovery.
973.11. Pre-Columbian Claims.

The Abridged Decimal Classification with its full Relative Index will doubtless be found quite sufficient for the average school library.

The prices of the above-mentioned classifications are as follows: Decimal Classification and Relative Index, $5.00; Abridged Decimal Classification and Relative Index, $1.50; Cutter's Expansive Classification, complete, $5.00.

Home Economics

Alice P. Norton

During the last quarter some experiments have been tried whose results should be recorded. Since one of the weak points in the teaching of cooking is the isolation of the subject, the attempt has been made to correlate the work as closely as possible with other studies. To have its full value, this work should add to the clearness of the images gained by the child in some of his studies, and should furnish subject-matter for others.

In the Fifth Grade the subject of the nature study planned for the winter was food. It was decided to make this a study of food plants rather than of the chemical constituents of the foods, and the cereals were chosen for the work. Stalks of the different grains, corn, wheat, oats, barley, and rye, were obtained and given to the children for examination. Pictures illustrated the appearance of various grains growing in the fields, while the painting of corn and of wheat gave an opportunity for the expression of the differences in mode of growth. The structure of the wheat grain was then studied, first under a hand lens, and then with the microscope.

Starch had already been discovered in the cereals, because of its thickening power, and by means of the iodine test, and the starch grains were now seen. The visit to the flour-mill which the class made showed more clearly the different coatings of the grain and their uses.

The possibility of preparing sugar from starch was illustrated by allowing each child to chew a piece of cracker for a few moments. Though the change had not been suggested, the children all discovered that the cracker grew sweet. This introduced the study of sugar, its chief commercial sources in the sugar-cane and the beet root, its mode of preparation for market, and a comparison of different kinds and grades of sugar.

During this time, at a period directly following the nature study, the children had cooked the products of the food plants studied (as outlined in the February COURSE OF STUDY). Eight lessons were given on these topics, three of them on corn, including the popping of corn, the cooking of corn-meal and hominy, and the making of a cornstarch mold; two chiefly

on wheat, including the preparation of breakfast cereals and the making of cereal coffee; one on potatoes and potato soup introduced another kind of starchy food, and showed the use of flour for thickening; and one on sugar, in the form of candy.

The nature work and the cookery have furnished many problems in arithmetic for the children to work out in their number lessons, and one writing period a week, that following the cooking, has been devoted to writing an account of the work done, including the recipes used.

The plan has on the whole worked well. Much of the work done in the nature study might have been accomplished as a part of the cooking lesson, but on some accounts it has been more satisfactory in this way. When the children come to the cooking class they expect active work, and it is often difficult to check their impatience to begin, long enough for them to gain an intelligent idea of what they are to do. While interest is by no means lacking in the problems that arise, there is always manifest a little disappointment if discussion or experiment take too much time. The plan carried out has made it possible to take all the time needed for study of the food plants, and for experiment, without this disadvantage. Constant use has been made in the cooking of work done in the nature study, and the children have been asked to apply directly the knowledge gained. The solution of some questions arising in the cooking class, as for example, "Why does corn pop?" has been worked out in the nature study.

One weak point of the work from the cookery standpoint has been too many lessons in succession on starch. Albumen was not introduced until after the eight lessons indicated were completed. More variety and perhaps greater benefit would have been gained if this had been introduced earlier.

That the interest of the cooking lies chiefly in its activity, and its close relation to the experience of the child, and not in simply preparing something good to eat, has been shown by the fact that one of the best lessons of the quarter was the one on cereal coffee, where the children roasted and ground wheat grains and used these for preparing a drink, in order to compare this with the beverage made from the cereal coffees on the market. Whenever anything transportable has been made, nearly every child has asked permission to carry the article home. That the work does react on the home is shown by the fact that a large part of the children repeat at home the work done at school, though no point has been made of having this done.

In the Sixth Grade a similar correlation with nature work has been successfully carried out, but two other attempts have not been so satisfactory. The connection between the cooking and the geography work, as outlined in January, has not been maintained, for the ground has been covered far more quickly in the cooking than in the geography. Perhaps a more careful planning of this work might make it more successful. The experiment in teaching French with the cooking was also a partial failure, for the children felt that it hampered them in their work. A little more previous training in French would have obviated some of the difficulties. The speaking of French during the serving of the food was more satisfactory. The experiment will be tried again, if possible, under more favorable circumstances.

The giving of the work in cookery to boys as well as girls, though by no means new, is not as yet general. It has been done as a matter of course, with no suggestion that any difference should be made; and the boys in every case have shown as much interest as the girls, and have ap-

parently received as much benefit. They have been as anxious to take their work home, and to cook at home. If the object of the work is not an industrial one, but is the training of the child, the preparing for citizenship, and the inculcation of sympathy with the home and its life, it is as valuable for the boy as for the girl.

Cooking in the Primary Grades

Flora J. Cooke

During this month each grade of primary children will devote the cooking time to the study or consideration of certain seeds and plants which it will be practicable to plant in the school garden. As the school closes in June, only such vegetables or berries can be selected as will mature in two months, i. e., radishes, lettuce, onion sets, etc.

To find what to choose, the children will need to read and experiment. They will also be allowed to select flowers to plant that can be used in school decoration.

Each child will be responsible for one vegetable or berry and one flowering plant. He will discover what is necessary for the best growth and rapid development of his chosen plants, and how he can best serve or use the fruit or flowers at the luncheon period. During the cooking periods, therefore, it will be necessary to use the lunch-room, library, and garden plot as laboratories for individual experiment. The children will help as much as possible in the preparation and care of the hotbed and its contents.

In some lessons each child will work independently, and at other times the entire class will help an individual with his problem. The records of all the experiments will be kept in the cook-books as data on food. The correlated work in reading, writing, and mathematics cannot yet be given in detail, but their necessity is suggested by the method of work outlined above. While there is no actual cooking planned for this month, the motive of the work in cooking in the primary grades, as outlined in October, is not changed. In considering the foods best to serve from the standpoint of the season, and in trying to discover how best to prepare them, it will be necessary for the children to employ different physical activities, gardening being substituted for cooking.

Literature in the Primary Grades

Flora J. Cooke

The time has passed when teachers need to be urged to give literature the place which its value merits in the primary school. However, the *basis for the selection of stories and their adaptation to the needs of a particular class of children* will always be interesting topics for consideration. The results of several years' experiments are here given.

The Selection of Stories

If the fundamental activities and interests of children determine the choice of stories, a detailed list of those used during an entire year, with any adequate explanation as to the motive and adaptation, would be too varied and comprehensive for the limits of one article. It is possible, however, to group the kinds of stories chosen from this standpoint under four general heads:

I. Stories which embody ideals of courage, generosity, strength, wisdom, unselfishness, kindness to animals, etc.

Children instinctively imitate what they